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**Western Technology and Equipment Likely To Be On  
Moscow's Shopping List During 1985-2000**

**For Offshore Projects:**

- o Seismic survey boats with simultaneous multi-survey capability using state-of-the-art computer hardware and software
- o Drilling platforms and rigs (dynamic positioning and reentry capability)
- o Production jackets and modules (ice-resistant models)
- o Pipeline construction materials, equipment, barges
- o Drilling and production equipment and services
  - Drill pipe, collars, tool joints, bits, risers
  - Instruments for on-line monitoring of all drilling operations and directional drilling
  - Blow-out preventers and controls
  - Casing, tubing, valves, packers, mandrels, seals
  - Wellheads, trees, valves, flowlines, gauges (for surface or seafloor installation)
  - Subsea manifolds and gathering systems
  - Submersible pumps, and cables for electric power supply
  - Offshore processing and treating equipment
  - Drilling fluid and mud-logging services
  - Instruments for wellbore coring, testing

**For Deep Onshore Projects:**

- o Onshore seismic surveying equipment (including weight-dropping and vibration techniques) using state-of-the-art computer hardware and software
- o Deep-drilling rigs equipped for severe service
- o Sour ( $H_2S$  and  $CO_2$ ) oil and gas manifold and gathering systems
- o Sulfur and carbon dioxide extraction technology
- o Sour ( $H_2S$  and  $CO_2$ ) oil and gas processing and treating equipment
- o Blow-out preventers and controls for severe service
- o Drill pipe, collars, tool joints, bits, and special drilling tools for severe service
- o Instruments for on-line monitoring of all drilling operations and directional drilling
- o Corrosion-resistant casing, tubing, valves, packers, mandrels, seals, and related chemical inhibitor technology
- o Wellheads, trees, valves, and flow lines for severe service
- o Deep-pumping equipment (especially submersible pumps and pump rods for rod-and-beam pumps)
- o Gas-lift equipment and compressor stations
- o Drilling fluid and mud-logging services
- o Instruments for well-bore coring, testing, measuring pressure and temperature, and logging

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25 April 1985

BACKGROUND ON ENERGY PROJECTS REQUESTED BY MOSCOW FOR JCC DISCUSSIONAstrakan Gas Development

Construction of this deep onshore gas field began in 1983 with stages II and III worth about \$1.2 billion now out for bids. The Soviets expect the field to produce 18 billion cubic meters of gas sometime in the 1990s. Engineering and management services and equipment for future construction are generally available from non-US sources. Moscow may look to the US for "downhole" equipment such as packers and safety valves.

Gas Compressors for Karachaganak

This is a \$500 million gas field project including wells, pipelines, and a gas processing plant; the project is already underway. A second plant planned for construction will need at least three compressor stations. Foreign firms and offshore affiliates of US firms are capable of supplying the services and equipment for future development.

Underwater Wellhead Equipment

Moscow will likely step up development of offshore Caspian Sea oil and gas over the next five years. US firms and subsidiaries are preferred suppliers of offshore wellhead equipment but Norwegian, French, and British companies are preparing to enter the market. The subsidiary of a US firm in West Germany may legally sell high-pressure wellhead equipment to the Soviets without license since the technology was acquired by the subsidiary prior to US controls.

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SUBJECT: Background on Energy Projects Requested by Moscow for  
JCC Discussion

Ice Tolerant Platforms for Sakhalin

Sakhalin development is stalled absent a Japanese commitment to purchase 3 million tons of LNG annually. Should the project get underway, three or more platforms could be added in waters 30 to 90 meters deep at an average cost of \$100 million per unit. Numerous foreign countries including Japan and Korea could supply platforms for this project.

Ice-Resistant Offshore Platform Construction Yards ) →

Platforms from the planned yards would be used in waters of the Barent's, Kara, and Okhotsk Seas. Several European countries plus Canada and Japan would be able to supply equipment and construction services for these yards at cost ranging from \$10 to \$40 million per yard.

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25 April 1985

FUTURE DECLINES IN SOVIET OIL AND GAS EARNINGS

Hard currency earnings from exports of oil and gas will likely fall sharply over the next five years.

- According to preliminary data, oil production declined slightly in 1984; hard currency oil exports were maintained only by cutting domestic consumption. *this is still improven to say the least but probably true*
- Oil sales account for nearly half of the Soviet Union's roughly \$32 billion annual hard currency earnings.

Even if the Soviets are able to sustain oil production at just under current levels and keep domestic use from rising, hard currency earnings from oil measured in constant dollars will decline by more than 50 percent by 1990.

- Should oil production decline by 1 million b/d as some experts predict, earnings would fall even more sharply to perhaps only one quarter of current levels.
- In either case, the decline in earnings will be even greater if the presumed decline in deliveries to Eastern Europe is not continued.

*is an assumption that EE is priority to hard currency.*

Gas sales cannot make up for lost oil earnings over the 1985-90 time period.

- Even under a maximum export scenario, hard currency earnings from gas sales will rise by only about \$1 billion in real terms over the next five years.

The earnings decline (measured in constant dollars) from reduced oil exports will become worse by the year 2000 even if oil production can be maintained and real oil prices rise.

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SUBJECT: Future Declines in Soviet Oil and Gas Earnings

- If the Europeans abide by their gas agreement to limit dependence, total earnings from oil and gas in the year 2000 will range from 40 percent to less than 70 percent of current earnings. Extensive use of Western energy technology and equipment would be needed to keep oil production and, hence, revenues at the high end of the range.
- Gas exports can make up the earnings gap in this time frame only if the Soviets can convince the Europeans to buy 120 billion cubic meters per year--roughly triple current levels.

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## OIL PRODUCTION, EXPORTS, AND REVENUES

(million b/d)

	<u>1983 Actual</u>	<u>1990</u>	<u>2000</u>
Production	12.3	11.0 - 12.0	10.0 - 12.0
Internal Consumption	9.0	9.3	8.6 - 9.4
Soft Currency Exports	2.2	1.4 - 2.0	1.4 - 2.0
Hard Currency Exports	1.4	0.5 - 0.9	0.2 - 0.8
(Earnings, billion <u>1983\$</u> )	(15.6)	(3.90 - 7.0)	(1.7 - 6.9)

## GAS PRODUCTION, EXPORTS, AND REVENUES

(billion cubic meters)

	<u>1983 Actual</u>	<u>1990</u>	<u>2000</u>
Production	536	620	950 - 1,000
Consumption	478	548	815 - 826
Soft Currency Exports	35	38	67
Hard Currency Exports	26	37	60 - 120
(Earnings, billion <u>1983\$</u> )	(3.2)	(4.1)	(5.8 -10.5)

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